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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,829	08/31/2001	Gary Ditlow	BUR9-2000-0146-US1	2812

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EXAMINER	
TANG, KENNETH	

ART UNIT	PAPER NUMBER
2195	

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/943,829	DITLOW ET AL.	
	Examiner	Art Unit	
	Kenneth Tang	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the Appeal Brief filed on 9/19/05. Prosecution has been reopened. Applicant's arguments have been fully considered but are now moot in view of the new grounds of rejections.

2. Claims 1-20 are presented for examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. **Claims 1-4, 6-10, 12-16, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurauchi (US 2002/0059625 A1) in view of Kimmel et al. (hereinafter Kimmel) (US 6,105,053).**

2. As to claim 1, Kurauchi teaches a method of performing a parallel application with host processors on a network *([0048]-[0049])*, comprising:

determining for each of said possible host a current capacity and a current utilization (presently occupied amount of the hardware resource and a total amount of the hardware resource) *([0093], etc.)*;

calculating for each of said possible host a difference (calculates an available amount of the hardware resource, by subtracting a presently occupied amount of the hardware resource from a total amount of the hardware resource) *([0093], etc.)*; and

sorting (by priority) said calculated differences (available amount) *([0094], [0173], [0192])*.

3. Kurauchi fails to explicitly teach determining and using a listing of all possible hosts on the network for performing the parallel application *(see Abstract)*. However, Kimmel teaches a multiprocessing system having a listing in the form of a hierarchical tree structure that represents all the job processors in the network that can be used. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of having the listing of all possible hosts on the network for performing the parallel applications to the existing system because this increases the efficiency level of affinity and this helps to maintain balanced processor and memory loads *(see Abstract)*.

4. As to claim 2, Kurauchi and Kimmel are silent wherein said determination of a listing of processors is itself a parallel processing application. However, it would be obvious to one of ordinary skill in the art to have the process of determining of a listing of processors be done in parallel because it would increase the speed of processing.

5. As to claim 3, Kurauchi *([0048]-[0049], [0008], [0012], [0029])* and Kimmel *(col. 6, lines 3-4, col. 9, lines 7-26)* teach wherein said determination of a listing of processors is executed in real time concurrently with said parallel application.

6. As to claim 4, Kurauchi *([0066])* and Kimmel *(see Abstract)* teach providing said selected listing of hosts to an operating system controlling an execution of said parallel application because it is inherent that the computer processor has an operating system that gives the instructions for task management and parallel processing.

7. As to claim 6, Kimmel teaches wherein said calculating difference between current capacity and a current utilization further comprises normalizing said difference *(col. 14, lines 1-3)*.

8. As to claims 7-10, they are rejected for the same reasons as stated in the rejection of claims 1-4.

9. As to claim 12, it is rejected for the same reasons as stated in the rejection of claim 6.

10. As to claim 13, Kurauchi teaches a computer network having a plurality of computation resources and an operating system for executing a target parallel application process using at least s subset of said plurality of computation resources, wherein said network includes a method to perform said target parallel application process *([0048]-[0049])*, said method comprising:

determining, for each of said possible computation resources, a current capacity and a current utilization (presently occupied amount of the hardware resource and a total amount of the hardware resource) *([0093], etc.)*;

calculating, for each of said possible computation resources, a difference between said current capacity and said current utilization (calculates an available amount of the hardware resource, by subtracting a presently occupied amount of the hardware resource from a total amount of the hardware resource) *([0093], etc.)*; and

selecting from said listing of all possible computation resources a listing of computation resources based on sorting (by priority) said calculated differences (available amount) as said at least a subset (portion of the resource remaining, etc.) of said plurality of computation resources to execute said target parallel application process (done by hardware resource management unit 3031) *([0094], [0173], [0192], [0155])*.

Kurauchi fails to explicitly teach determining and using a listing of all possible hosts on the network for performing the parallel application *(see Abstract)*. However, Kimmel teaches a multiprocessing system having a listing in the form of a hierarchical tree structure that represents all the job processors in the network that can be used. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of having the listing of all possible hosts on the network for performing the parallel applications to the existing system because this increases the efficiency level of affinity and this helps to maintain balanced processor and memory loads *(see Abstract)*.

11. As to claims 14-16, they are rejected for the same reasons as stated in the rejection of claims 2-4.

12. As to claim 18, it is rejected for the same reasons as stated in the rejection of claim 6.

13. As to claim 19, it is rejected for the same reasons as stated in the rejection of claim 13.

14. As to claim 20, it is rejected for the same reasons as stated in the rejection of claims 3 and 4.

15. **Claims 5, 11, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurauchi (US 2002/0059625 A1) in view of Kimmel et al. (hereinafter Kimmel) (US 6,105,053), and further in view of Overby, Jr. et al. (hereinafter Overby) (US 6,016,503).**

16. As to claim 5, it is rejected for the same reasons as stated in the rejection of claim 1. In addition, Robertazzi teaches the job queue or list containing quantification data but fails to explicitly teach it containing a history. However, Overyby teaches calculating and predicting utilization and utilization differential based upon historical utilization *(col. 2, lines 47-51, col. 3, lines 54-61, col. 5, lines 22-23)*. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Overby with Kurauchi and Kimmel because the historical information can be used to know when over-utilization has occurred, and therefore, better manage the resource *(col. 2, lines 14-17, 47-51, col. 5, lines 22-23)*.

17. As to claims 11 and 17, they are rejected for the same reasons as stated in the rejection of claim 5.

Response to Arguments

18. Applicant's arguments have been fully considered but are now moot in view of the new grounds of rejections.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (571) 272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kt
11/22/05

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